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Remarks/Arguments

Claims 1-64 are pending in the application. No claims are amended by this response. Reconsideration and reexamination of the claims is requested in light of the below remarks.

Claims 1-24, 32, 33 and 41-64 stand rejected under 35 USC 101 because the claims are asserted as containing both an apparatus and method steps of using the apparatus. The rejection is traversed.

The basis for the rejection is stated as:

"Here, the claims contain line speed and the ratio of the gap in relation to said line speed. This is a process limitation and line speed itself is not a structural limitation of the apparatus that is necessary in apparatus claims. Therefore, the claims overlaps two different statutory classes of invention. See MPEP 217.05(p)."

It is respectfully submitted that the rejection is not sustainable because the line speed language asserted as forming the method step is anything but a method step. The asserted language merely uses an operational parameter of the machine (line speed) to define a structural feature (gap size) of the machine. The use of the operational parameter is not a method of using the claimed apparatus. The use of an operation parameter to define the scope of a structural element does not change the fact that the claim element at issue is a structural element. As the claim element at issue is a structural limitation, the rejected claims are not a combination of two statutory classes.

A look at the claim element at issue will be revealing. Using claim 1 as an example, the language at issue is:

"wherein the difference between the second radial distance and the first radial distance comprises a gap, the size of the gap being determined by the ratio of the gap (in units of millimeters) to the line speed (in units of millimeters per second) and the ratio ranges from 0.001 to 0.020 second."

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This claim element limits the gap size (a structural feature) and defines the bounds of the gap size in terms of a mathematical equation. The gap is defined in the claim element as being the difference between the second radial distance and the first radial distance, which are structural elements. The first and second radial distances are defined in the claims as the distance from the longitudinal axis of the die to the die opening and the choke ring, respectfully.

The physical range of the claimed size of the gap is determined as the ratio of the gap (in units of millimeters) to the line speed (in units of millimeters per second), with the claimed ratio falling within the range of 0.001 to 0.020 seconds. Thus, the line speed is used in the claim element as an operational parameter of the claimed apparatus to define the range of the claimed gap size. It is not used as a separate claim element, let alone a method claim element. The use of the line speed in this manner is purely structural as it defines the claimed range for the gap size and the line speed is not used as a method or process step as asserted.

MPEP 2173.05(p) and its supporting case, *Ex parte Lyell*, 17 USPQ2d 15 (1990) 1548, on which the 35 USC 101 rejection is based are not applicable to Applicants' claim language and are distinguishable. The claim at issue in *Lyell*, set forth in full below, combined both an apparatus claim and a method for performing the apparatus. The first part of the *Lyell* claim is written in standard structural language, until the method claim transition "and further comprising the steps of", where the following four enumerated steps are method steps written in the traditional format.

2. An automatic transmission tool in the form of a workstand and method for using same comprising:
 - a support means,
 - and [sic] internally splined sleeve affixed upright to said support means,
 - a threaded adjustment bolt threadably engaged through a hole in the bottom of said support means and projecting upward through said support frame into said sleeve,
 - and further comprising the steps of
 1. positioning the output end of an automatic transmission onto said upright sleeve,
 2. removing the internal components of said automatic transmission from the casing of said transmission,
 3. repairing and replacing said internal components back into said casing, and

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4. adjusting said internal components for fit and interference
by means of adjusting said upwardly projecting adjustment bolt.
(*Lyell* at 1549)

The *Lyell* claim language expressly combines apparatus and method limitations. In contrast, Applicants' claims do not expressly define method/process steps that were at issue in *Lyell*. Applicants' claims do not contain an express transition related to method/process steps; nor do Applicants' claims follow up that transition with expressly stated steps. Applicants' rejected claims use an operational parameter (line speed) to define the range of a structural feature (gap size). This use of the operational parameter is completely contained within a structural limitation to the gap size. The use of the operational parameter in this manner is not a method/ process step as was at issue in *Lyell* and does not invoke the doctrine of *Lyell*. As such, *Lyell* and MPEP 2173.05(p) are not applicable and do not reach Applicants' claims. Therefore, Applicants' claims do not overlap two statutory categories.

Claims 1-24, 32, 33, and 41-64 are rejected under 35 USC 112, second paragraph as being indefinite. The rejection is traversed.

The basis for the indefiniteness rejection is stated as, "The claims are also indefinite since it is unclear of the range in line speeds for determining the gap." The Office Action then relates the asserted basis for indefiniteness to one of ordinary skill in the art, "The claims are not definite for one skilled in the art to determine what the subject matter is claimed, in this case the line speed since it is necessary to determine the gap which is also not specified."

A plain reading of the reason for the indefiniteness rejection makes clear that the basis for the rejection is that the line speed is not bounded, but left open-ended. This position is bolstered in that the claims containing an upper limit on the line speed (Claims 10, 15, 23, 32, 41, 51, 61) were not rejected for indefiniteness. Thus, the sole basis for the indefiniteness rejection is that the line speed is not bounded.

The indefiniteness rejection as stated in the Office Action is not tenable as it misapplies the applicable case law. The Federal Circuit has very clearly set forth a standard for determining the indefiniteness of a claim:

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"In determining whether the claim is sufficiently definite, we must analyze whether 'one skilled in the art would understand the bounds of the claim when read in light of the specification.'" *Allen Eng'g Corp. v. Bartell Indus.*, 299 F.3d 1336, at 1348 (Fed. Cir. 2002), citing *Personalized Media Communs, L.L.C. v. ITC*, 161 F.3d 696, at 705 (Fed. Cir.1998).

Therefore, for the claims in the pending application, the basis for determining indefiniteness of the claims is whether one skilled in the art would understand the bounds of the claims in light of the specification and not whether the line speed is bounded. When the rejected claims are viewed in light of the specification, it is clear that the bounds of the claims are understood by one skilled in the art and by any reader of the specification for that matter.

Using claim 1 as an example, the language at issue is:

"wherein the difference between the second radial distance and the first radial distance comprises a gap, the size of the gap being determined by the ratio of the gap (in units of millimeters) to the line speed (in units of millimeters per second) and the ratio ranges from 0.001 to 0.020 second."

This claim element limits the gap size and defines the bounds of the gap size in terms of a mathematical equation and there is no ambiguity in the variable terms used in this claim element or the equation itself.

The gap is defined in the claim element as being the difference between the second radial distance and the first radial distance. The first and second radial distances are defined in the claims as the distance from the longitudinal axis of the die to the die opening and the choke ring, respectfully. The specification discloses in the drawings and describes in the text the first and second radial distances as r_c and r_d , respectfully. (See Fig. 2 and the related description). The gap is thus defined as the difference between r_c and r_d , which can be mathematically represented as the equation $\text{Gap} = r_c - r_d$. There is no ambiguity here.

There is also no ambiguity in the term "line speed." The term line speed is well known to one of ordinary skill in the art and is fully described in the specification. The line speed is the speed at which the foam is drawn away from the die outlet by the downstream equipment in a

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typical foam extrusion line. (See paragraphs 41, 50, and 52 of the specification). The term line speed is defined in the specification as "the mean line speed of downstream equipment". (See paragraphs 50 and 52 of the specification).

The claimed size of the gap is determined as the ratio of the gap (in units of millimeters) to the line speed (in units of millimeters per second), with the claimed ratio falling within the range of 0.001 to 0.020 seconds. A ratio is a well known mathematical equation, which for purposes of the claim would be the Gap divided by the Line Speed (L) or Gap/L , which results in the following equation when substituting the radial distances for the gap and setting the equation equal to the claimed range:

$$(r_c - r_d)/L = 0.001 \text{ to } 0.020$$

There is no ambiguity in the equation. The variables of the equation are unambiguously described and/or defined in the specification. The equation represented by the claim is also unambiguous. One of ordinary skill in the relevant art easily understands the bounds of the equation. The equation covers any combination of r_c , r_d , and L that when put into the equation with the claimed units results in a ratio within 0.001 to 0.020 seconds. In fact, any person with basic Algebra skills will understand the bounds of this element.

That there is no upper limit on the line speed does not render the claim indefinite as the claim is unambiguously bounded by requiring the ratio to fall within the claimed range of 0.001 to 0.020. The lack of an upper limit on the line speed is not relevant in this case to determining the indefiniteness of the claim. When one applies the Federal Circuit's standard of definiteness to the claims, the claims are, on their face, definite as the gap size is bounded by the range limitations on the claimed ratio. To assert that the claims are indefinite because the line speed is not bounded incorrectly applies the relevant legal standard.

The logic of the analysis for claim 1 applies equally as well to the other rejected claims. They are all bounded in such a way that one of ordinary skill in the art can fully understand the bounds of the claim. Independent claim 1, like claim 53, defines the gap in terms of a ratio as claim 1 and is unambiguous for the same reasons as stated for claim 1.

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Independent claims 17 and 43 define the gap size in terms of the contact time, which as described in the specification is the time it takes for the foam leaving the die opening to contact the choke ring. This is an easily measurable characteristic. One can monitor an element of the foam as it leaves the die opening and time the amount of time it takes for that element to contact the choke ring. If that time is between 1.0 and 20.0 milliseconds, then the gap falls within this element of claims 17 and 43. The use of the contact time to define the gap size is not indefinite. In fact, it is very definite and can easily be measured. One of ordinary skill in the art can easily understand the bounds of these claims.

No element of claims 17 and 43 expressly calls for a line speed. It is respectfully submitted that an error was made in rejecting claims 17 and 43 and the corresponding dependent claims as being indefinite for not having any line speed limitations.

Claims 1-24, 32, 33, and 41-64 are all unambiguous and are definite. One with a basic understanding of Algebra can understand the scope of gap size limitations of these claims. Basic Algebra is clearly within the grasp of one of ordinary skill in the art. Therefore, one of ordinary skill in the art will have no trouble determining the boundaries of these claims when viewed in the context of the specification. The rejection of these claims as being indefinite is not tenable. It is respectfully requested that the rejection be withdrawn.

Applicants do note that in the anticipation rejection of the claims over Beckwith, the Examiner did input line speeds of 50 and 300 mm/s into the claims as written and came up with corresponding gap sizes. This is an indication that the claims as written are not indefinite. One of ordinary skill in the art can input similar line speeds to determine if their product comes within the claimed range.

Claims 1-64 stand rejected as being anticipated by Beckwith (U.S. Patent No. 5,622,732). The rejection is traversed.

For the claims to be anticipated by Beckwith, each and every element of the claims must be found in Beckwith. As this is not the case, the rejection fails.

Beckwith '732 discloses an extrusion die 10 comprising an interior extrusion passageway 18 upstream of and leading to a die outlet 16. The passageway 18 is located within the interior of

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the die 10 and is supplied extrudate from an extrusion passageway 20 via a portion of the passageway described as a choke gap 22. The passageways 18 and 20 are generally horizontal where they are connected by the angled choke gap 22 passageway.

An annular choke ring 30 is internally positioned within the die lip assembly 19 and is capable of axial movement relative to the die lip assembly 19. As best seen in Fig. 4, the axial movement of the choke ring 30 moves the shoulder 27 of the choke ring 30 within the choke gap 22 to control the size of a restricted flow area 25 and thereby control the flow of extrudate through the die. "This flow control enables the user to reduce any spider marks on the finished foam material caused by the spider legs 26 at the inlet of the extrusion die apparatus, and also allows for better control of the pressure drop within the choke gap passageway by controlling the flow and distribution of the thermoplastic material." (Col. 5, lines 47-54).

All of the claims of the current application define a die and choke ring and die opening relationship that is not shown in Beckwith. All of the independent claims call for:

"a choke ring having an opening defined by an annular choke ring surface, the choke ring being positioned relative to the extruder such that the annular die opening is received within the choke ring opening, the choke ring opening being concentric about the longitudinal axis and positioned therefrom a second radial distance."

The asserted choke ring of Beckwith does not define an annular choke ring surface that is positioned relative to the extruder such that the annular die opening is received within the choke ring opening. The die opening of Beckwith does not extend within the choke ring as required by the claims. Therefore, the claims are not anticipated by Beckwith because this claimed structural relationship between the choke ring and the die is not met.

Applicants do note with appreciation that the obviousness rejection of the claims over Beckwith that was presented in the prior Office Action is not repeated in the current Office Action, which is indication that the claims are no longer considered obvious in view of Beckwith.

It is respectfully submitted that claims 1-64 are novel and patentable over Beckwith.

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Given that the claims are patentable subject matter, definite, and not anticipated it is respectfully submitted that the claims are in condition for allowance. Early notification of allowability is respectfully requested.

If there are any questions, please contact the undersigned attorney.

Respectfully submitted,

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